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NIAID, THE NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES

National Institute of Allergy and
Infectious Diseases, Bethesda, Maryland

1962

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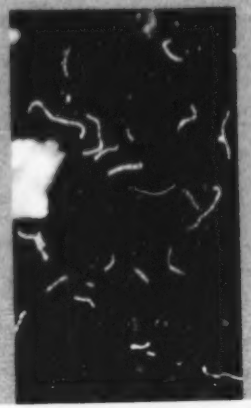

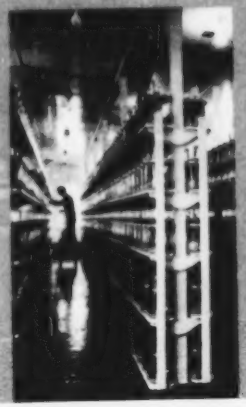

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE Public Health Service

NIAID

THE NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES

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16. Abstracts National Institute of Allergy and Infectious Diseases is a component of the National Institutes of Health. The various accomplishments, activities, and goals of NIAID are presented, as well as an understanding of the importance of continuing research. Described are laboratories of infectious diseases, biology of viruses, immunology, bacterial diseases, germfree animal research, parasite chemotherapy, parasitic diseases, tropical virology, and clinical investigation, as well as the Rocky Mountain Laboratory in Montana.

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Preface

Since the last decade of the 1800's the United States Public Health Service has been building its research programs. Originally centered in a tiny laboratory established, in 1887, in the Staten Island hospital for merchant seamen, under the direction of Dr. Joseph J. Kinyoun, the laboratory emphasized, from its very beginning, medical research as a basic function of the Service.

The National Institute of Allergy and Infectious Diseases is one of the components of the National Institutes of Health, Public Health Service research headquarters in Bethesda, Md., a suburb of the Nation's Capital. Its program is supported by public funds appropriated by the Congress of the United States. Its continuing aim, broadly stated, is improvement of health through research into the problems implicit in the name of the Institute. In these areas, which are described in the following pages, it makes a vital contribution to the overall goals of the Department of Health, Education, and Welfare of which it is a part.

Many public Health Service scientists whose work contributed outstandingly to the research stature of the Service made their contributions to infectious disease research in the days of the Hygienic Laboratory, the nucleus of the present National Institutes of Health, and most particularly the progenitor of today's National Institute of Allergy and Infectious Diseases. The Institute was authorized in December 1955 by the Congress through the Omnibus Medical Research Act.

Each new accomplishment, a milestone in the medicine of its day, added to the scientific reputation of the Public Health Service. Scientists in the field of infectious diseases who made outstanding contributions include: Dr. Kinyoun, who was among the early investigators to produce diphtheria antitoxin in the United States; Dr. Edward Francis, delineator of the various clinical characteristics and the method of transmission of tularemia; Dr. James P. Leake, who perfected the multiple-pressure method of vaccination still in use today; Dr. George McCoy, whose work on plague in the early 1900's focused national interest on research in the Service; Drs. M. J. Rosenau and J. F. Anderson, pioneers in the study of anaphylaxis; Drs. Roscoe R. Spencer and Ralph R. Parker, whose research culminated in an effective vaccine against Rocky Mountain spotted fever; and Dr. Charles Armstrong, who successfully transmitted the virus of poliomyelitis to small laboratory animals for the first time and paved the way for the extensive research which produced poliomyelitis vaccine.

Although progress against the infectious diseases in recent years has been rapid and gains are continuing, serious problems remain unsolved even in the area of bacterial diseases where antibiotics have had so favorable an effect. The widespread allergic diseases, the extent of which is only recently becoming understood, are a whole field that can be expected to profit from modern techniques. New information about the basic processes which cause allergies may be broadly applicable to other diseases and abnormalities. Our knowl-

edge of the viral diseases is still fragmentary in spite of impressive strides made in virology. Increased knowledge about the structure and functioning of viruses, the smallest "living" substances, is important for all the biological sciences.

A few representative diseases studied by scientists supported by the National Institute of Allergy and Infectious Diseases are influenza, hepatitis, rheumatic fever, encephalitis, toxoplasmosis, malaria, schistosomiasis, and histoplasmosis. One of the challenges emerging from the study of infectious and parasitic disease problems is a growing awareness among scientists and physicians of the relation of infection to chronic disorders. Future progress against many chronic ailments may be rooted in better understanding and more effective control of infections early in life.

A concrete measure of the Institute's impact on microbiological research in universities and medical schools throughout the country is afforded by contrasting the financial support available under the grants program today with that in the recent past. Out of a total 1962 appropriation of $56 million, funds allotted for grants, fellowships, and training amount to approximately $43 million. In 1955, when allergy-immunology first became the concern of the Institute, the total Institute budget for intramural and extramural research was a little over $6 million, of which $2 million was the extramural portion. Present funds allow support of such fundamental studies as those of Dr. Peter Brian Medawar, the 1960 winner of a Nobel Prize in medicine, whose work in immunochemistry has far-reaching implications. The entire field of allergy-immunology has been revitalized in recent years. Research conducted and supported by the National Institute of Allergy and Infectious Diseases has figured prominently in this progress.

The following pages, primarily devoted to the research programs of the Institute laboratories based in Bethesda, can only suggest the scope and complexity of current research. In addition, there is a brief statement of the areas in which the Institute supports research in other institutions in this country and abroad by means of grants-in-aid and fellowships.

The Public Health Service has reason to be proud of its scientists, past and present. The National Institute of Allergy and Infectious Diseases shares this pride and with it the obligation to uphold and extend through vigorous and imaginative programs the research responsibilities of the Service.

Justin M. Andrews

JUSTIN M. ANDREWS,
Director,
National Institute of Allergy and Infectious Diseases.

LABORATORY OF INFECTIOUS DISEASES

The roots of the Laboratory of Infectious Diseases go back to 1887 when a Public Health Service bacteriology laboratory was established on Staten Island, New York. Present-day research encompasses not only bacteria but viruses and fungi as causes of disease. In respiratory virus research. laboratory scientists have played key roles in the discovery of the first representatives of several viral groups (adenoviruses, parainfluenza and respiratory syncytial viruses) now known to be responsible for a large percentage of the severe respiratory illnesses of children. A major challenge to respiratory disease investigators is delineation of still undefined viral causes of these illnesses.

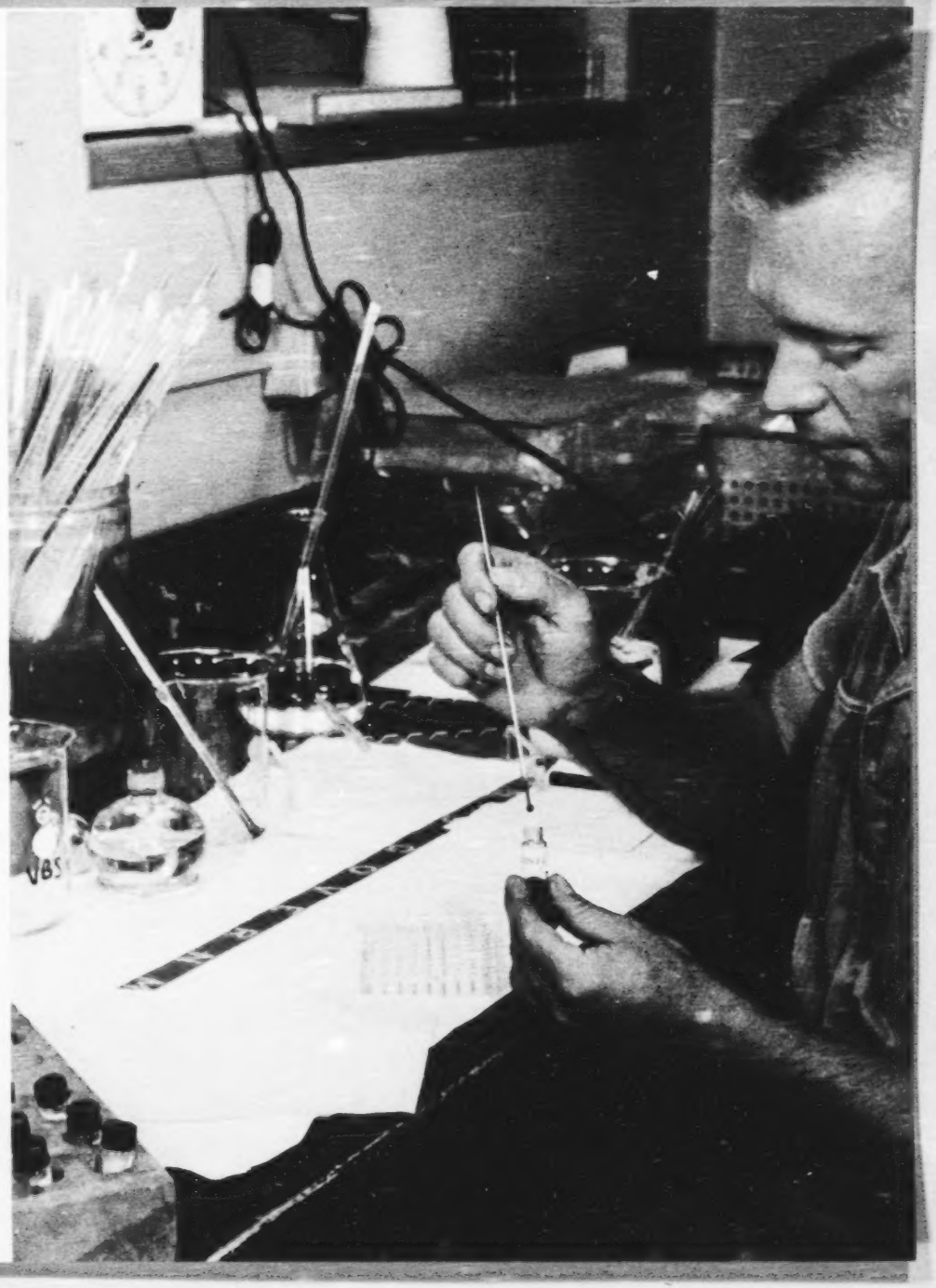
The knowledge that about 60 percent of the more serious respiratory illnesses of young children can now be explained makes the development of effective preventive vaccines against the known agents a worthwhile undertaking. Several experimental vaccines have been tested and additional vaccines will be prepared on a pilot study basis.

Field laboratory which has been set up in house trailer on a local Maryland farm where cancer viruses of wild mice are being studied.

With colleagues of the National Cancer Institute, Laboratory scientists are investigating mouse polyoma cancer virus in the Laboratory, in a natural urban environment and in a rural setting.

The program of the medical mycology unit of the Laboratory ranges broadly from basic laboratory studies of new and unusual fungi to the testing of experimental drugs for possible use in the severe fungal diseases for which there is presently no cure. One such study with the Laboratory of Clinical Investigation is described in the section devoted to that Laboratory. The finding of the causative agent of histoplasmosis in urban Washington, D.C., is another notable accomplishment.

In addition to the team research projects exemplified above, the Laboratory supports basic research in medical and physiological bacteriology. This is a varied program devoted to the study of fundamental biological activity of various bacteria, including the *Staphylococcus* and *Streptococcus*. Corollary studies on the biochemistry of antibiotics are a long-term interest of the bacteriologists.

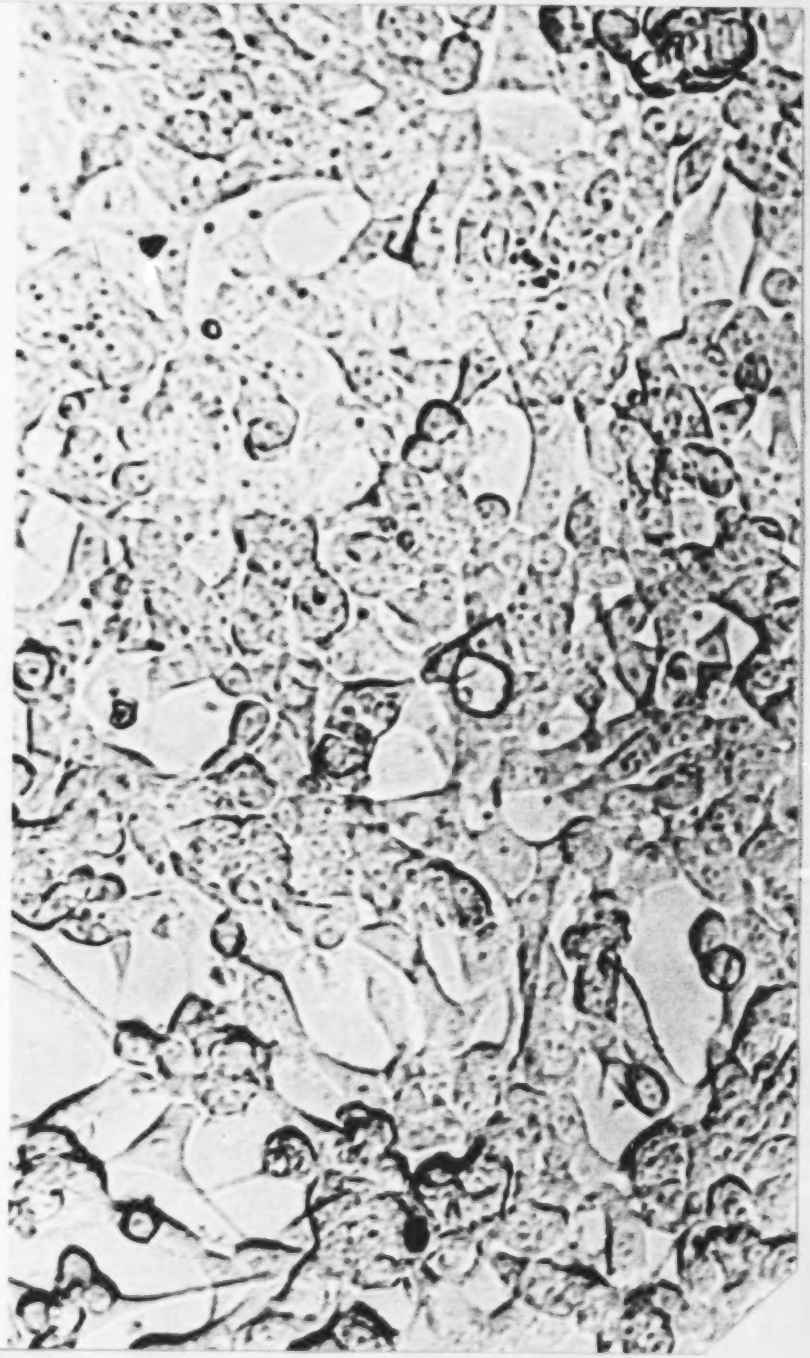


Making serum dilutions with microloop for microplate complement fixation test.

LABORATORY OF BIOLOGY OF VIRUSES

The Laboratory of Biology of Viruses is interested in viruses as infectious macromolecules capable of profound effects upon the metabolism of cells, rather than as the causes of infectious clinical diseases. Virus infection of a cell, replication of virus in the cell, and in some cases complete integration of the virus into the hereditary framework of the cell, make these agents very important tools for the study of fundamental cell processes. An additional advantage is the virus capability of self-replication which makes it possible to demonstrate and identify a single ultra-small virus particle.

Most of the units making up this Laboratory are therefore investigating the biological and biochemical factors involved as a virus attaches to, enters into, multiplies in, and is released from a cell. Cells of various origins grown in tissue culture and a variety of viruses are used in this



Cancer cells from a human being can be grown in bottle culture for many years. Cells like these are used for studying viruses which cause human disease.

work. Practical implications of basic findings may be tested in whole animals.

An important part of these basic studies concerns the biochemical and biophysical makeup of the virus itself. This requires mass production of large amounts of virus with subsequent separation from impurities, and fractionation of the purified virus into its various chemical components. Much current work is with the nucleic acids of viruses. The electron microscope is a very important tool in studies of the physical structure of different viruses, since technics are now available for the investigation of detailed substructure of individual virus particles.

Because of the intimate relationships between the virus and the normal metabolic processes of the cell it infects, several of this Laboratory's units are investigating the biochemical, genetic, and morphological properties of normal mammalian cells as well as certain tumor cells. This information is essential to the eventual interpretation of the changes found as the result of virus infection.

Coxsackie virus as seen through an electron microscope. Diameter of the virus is about one-millionth of an inch.

LABORATORY OF IMMUNOLOGY

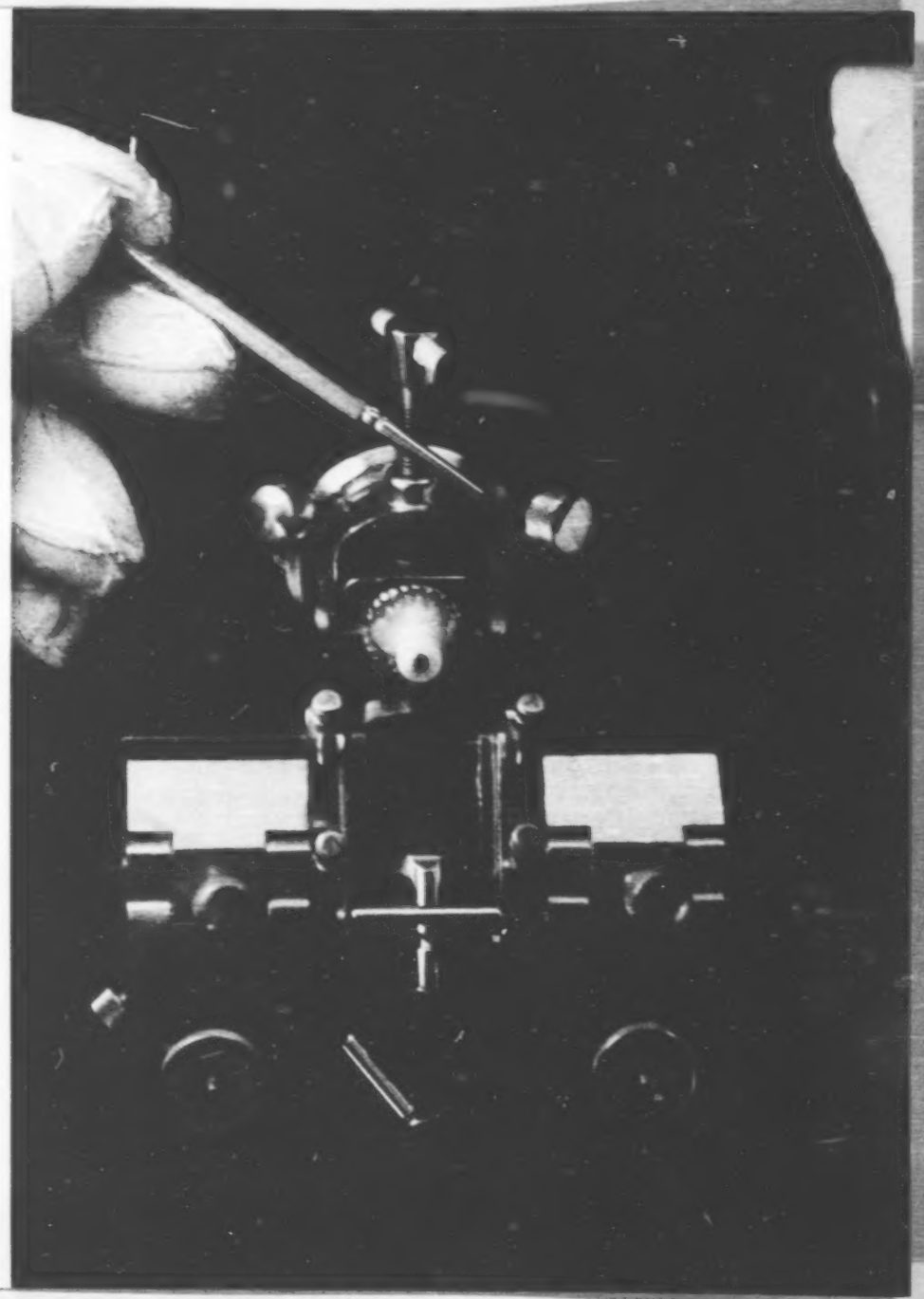
Since the activation of the Laboratory of Immunology in 1957, the research program has concentrated principally on basic studies. Recently there has been a tremendous resurgence of interest in the field of basic immunology. The application of modern techniques of immunology to the study of human disease makes immunologic investigation a fruitful new research approach to many long-standing scientific problems.

To supplement its highly basic laboratory research, the Laboratory of Immunology has initiated clinical studies in certain aspects of allergy and immunology. In collaboration with the Institute's Laboratory of Clinical Investigation, studies are being conducted on the immunologic aspects of such diseases as lupus erythematosus, nephritis, chronic thyroiditis, and others in which an autoimmune basis is suspected. As staff and patient material permit, other allergic and immunologic clinical problems will be considered.

Technician examines an enlargement of an immunoelectrophoresis pattern. Each line identifies one of the proteins found in human serum.

Meanwhile, the baseline studies in the laboratories continue on such problems as transplantation of tissues to observe host-versus-graft and graft-versus-host reactions during transfers of lymphoid cells; studies on antibody production and the mechanism of hypersensitivity; studies of autoantibodies in experimental animals; and immunochemical and immunogenetic studies of the protein isoantigens in serum. In one facet of a broad study of cellular localization of antigens and antibodies, an application has already emerged which may have far-reaching practical value in malaria eradication. In cooperation with the Laboratory of Parasite Chemotherapy, scientists used fluorescent antibody technique to demonstrate the parasite of human malaria, the first recorded instance in which a human malaria parasite has been seen by this method.

Other basic research which promises important practical information is a study of the chemical, physical, and skin reactive properties of extracts of house dust, a substance to which nearly one-third of all allergic individuals give a positive skin reaction.



Cutting of small pieces of tissue in a subfreezing cabinet for fluorescent antibody studies.

THE LABORATORY OF BACTERIAL DISEASES

A major research effort of the Laboratory of Bacterial Diseases is devoted to basic studies of intracellular parasitism. The investigation of this host-parasite relationship holds much promise of increasing our understanding of disease and immunity.

Specific research underway deals with possible changes in characteristics of infected, normal and immune cells, and the effect of the intracellular environment on the infecting organism. One aspect of this research is the investigation of antibody production by cells *in vitro*. Enzymatic and biochemical studies embrace the interrelationships of cells, micro-organisms, and their products.

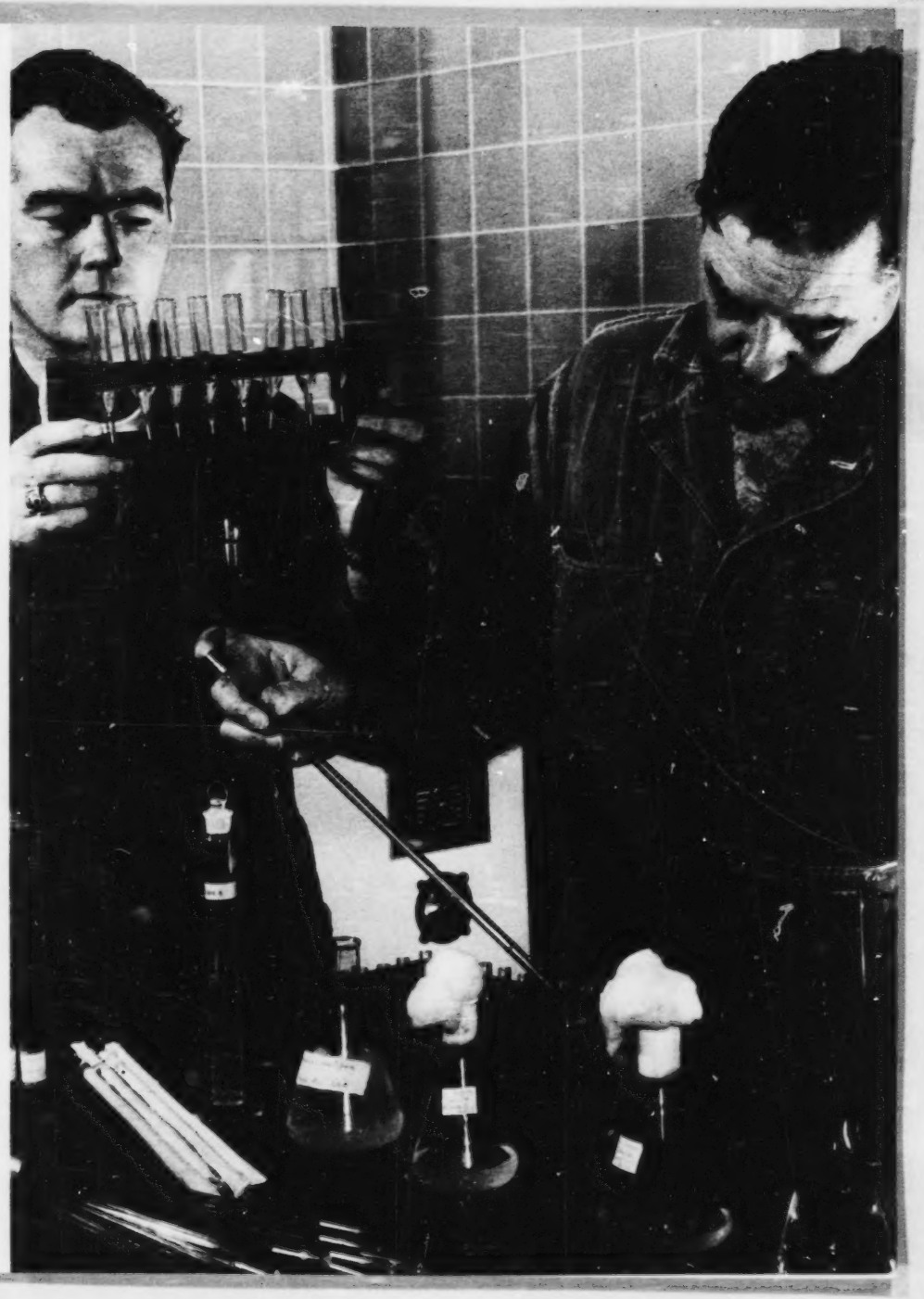
Studies on human and animal brucellosis are a long-term interest of the Laboratory. Effective medical treatment is now available for human cases, and a successful control program is reducing the incidence of bovine

Using a continuous flow system in a refrigerated centrifuge for separation of antigenic components of bacteria.

brucellosis in the United States. On a worldwide basis, however, human illness due to infection with *Brucella* is a problem of significant proportions, and economic losses as a result of the infection in domestic livestock have a tremendous impact on the agricultural economy. The Laboratory collaborates with the World Health Organization and with other brucellosis research centers throughout the world on many problems in the field, including the classification of *Brucella* and the epidemiology of the disease.

Studies on the *Staphylococcus* are directed primarily toward determining the factors responsible for pathogenicity, and toward development and standardization of tests for measuring the relative infectivity of different strains of the organism. Antigenic analysis as a tool for identification and classification is also receiving attention.

Other studies deal with *Pseudomonas,* which is emerging as an organism of considerable importance in debilitated, burned, and chronically ill patients, and with L forms of bacteria which are of basic biologic significance.



Standardization of the Brucella hemagglutination test.

LABORATORY OF GERMFREE ANIMAL RESEARCH

As a reflection of the growing application and importance of germfree studies, the Institute created a separate Laboratory of Germfree Animal Research in 1959. Since its inception, the Laboratory has continued to expand the scope of its research. Today, germfree guinea pigs, mice, chickens and rats are being used in a variety of studies on immunologic and disease processes.

The purpose of germfree animal research is to enable scientists to study problems uncomplicated by the presence of the microbial flora which "contaminate" all normal experimental animals. Rearing such animals is one of the most demanding and complex methods employed in laboratory investigation. However, the resulting product, an animal completely free of detectable micro-organisms, is itself a magnificent laboratory for the study of a multitude of biological problems.

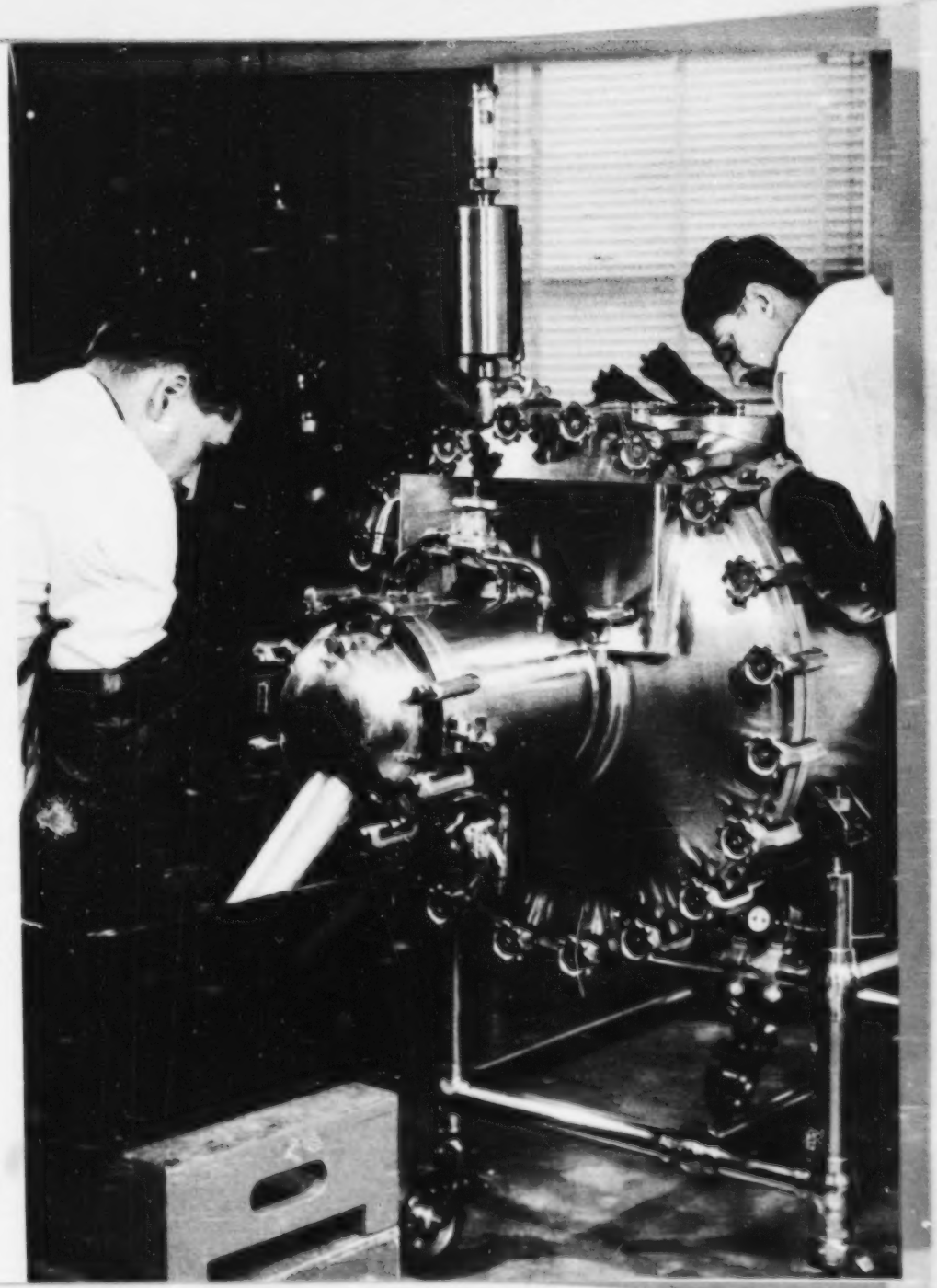
Inside specially constructed tanks in which germfree animals are born and live their entire life span, gloved portholes allow access by investigators who work with experimental animals in the germfree environment.

Through cooperative projects with other Institute Laboratories, as well as different components outside the Institute, this technique is being brought to bear on problems in many areas of research.

The earliest work, using germfree guinea pigs, was a study of the role of intestinal bacteria in amebiasis, a parasitic disease. Recent findings from this continuing study are provocative. Relationships between the host, its normal flora, and other protozoan and worm parasites are being studied. Through the use of such "clean" animals, scientists are evaluating dietary factors in these infections.

Laboratory scientists are also turning their attention to the behavior of viruses in the germfree host. A comparison of the relative susceptibility of conventional and germfree mice as well as possible interactions among bacteria and viruses, are continuing interests of the staff.

Data gathered from a fundamental study of any differences between the conventional and germfree species can provide insight into the ways that normal "contamination" may affect a host's physiology. Such unique scientific information has been essentially unobtainable until the advent of the relatively new specialty, germfree animal research.



Inoculum for germfree animals is sterilized chemically prior to introduction into germfree unit.

LABORATORY OF PARASITE CHEMOTHERAPY

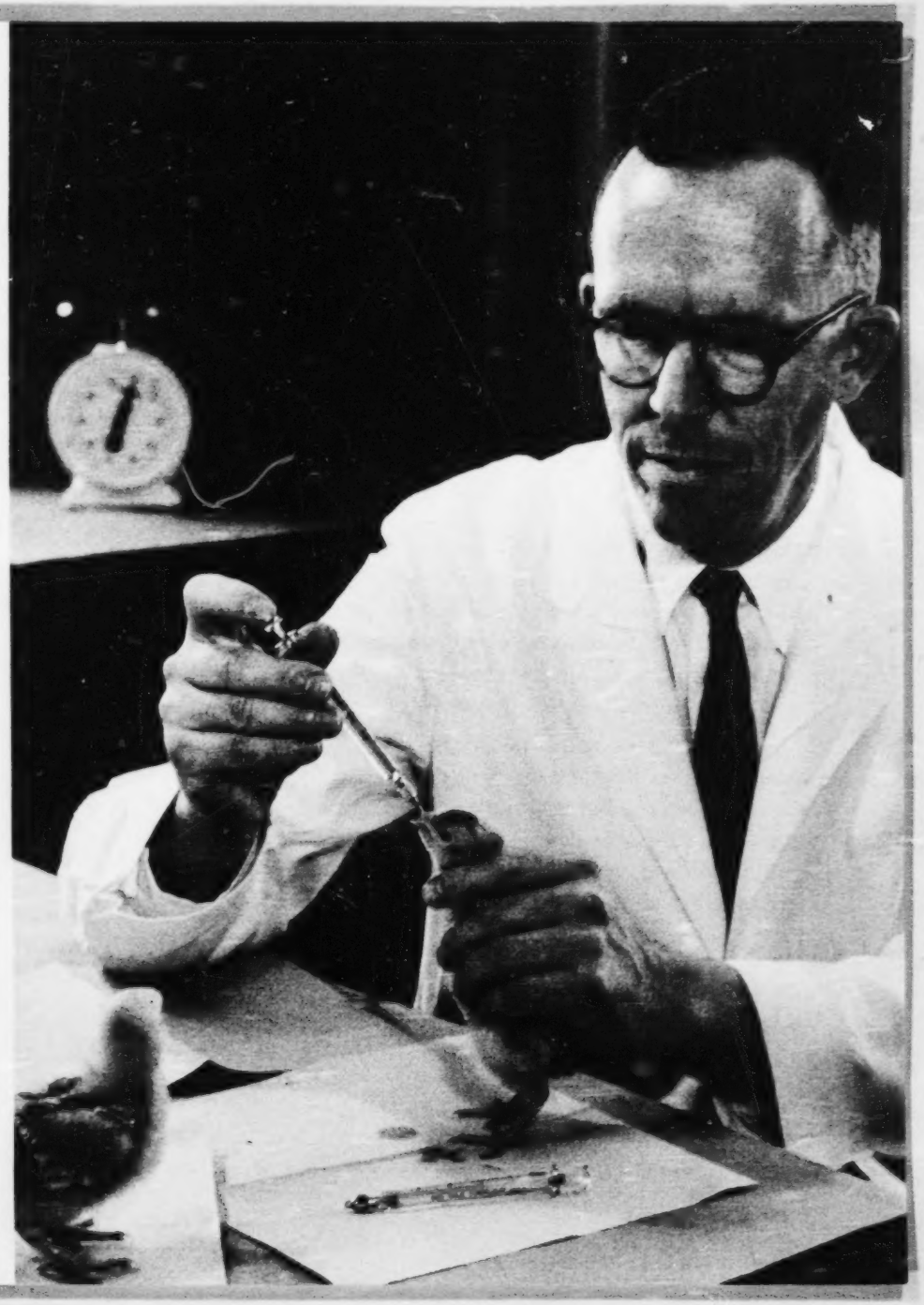
The Laboratory of Parasite Chemotherapy has a large research investment in worldwide malaria eradication, a program to which the United States has a continuing commitment. As a direct result of a recent discovery by Laboratory personnel that it is possible to transmit monkey malaria to man, the whole problem of simian malarias is being restudied. Prior to this, malaria experts have taken for granted that this would not be a problem in the eradication of the human disease. This is only one facet of the broad program of malaria investigation which will continue to receive attention from the scientific staff, whose interests in malaria and other tropical disease problems are many and varied.

As a result of the finding mentioned above—the transmission of simian malaria to man—existing projects have been strengthened by additional

Transferring mosquitoes (*Anopheles freeborni*) infected with simian malaria infectious for man. Insects are removed from large cage by suction and blown into small containers for shipment or for use in infecting human volunteers.

staff, and new projects instituted to explore the various ramifications of this global problem in the laboratory, the clinic and in the field. Prisoner volunteers have contributed vital data concerning the clinical picture, as well as actual proof of the transmissibility of these malarias to man. A field unit in Malaya, to remain there for several years, will carry out, in an area of high infectivity, studies of all aspects of the simian-human malaria chain.

Another finding with interesting ramifications is scientific proof obtained recently that a strain of human malaria from South America is resistant to chloroquine, which has been used effectively since World War II, with no evidence of resistance. Continued emphasis is being given to fundamental aspects of other problems in tropical parasitology and chemotherapy. These include the chemotherapy of intestinal parasites, the effect of nutrition on chemotherapy, the resistance of parasites to drugs, intensive and extensive study of the development and chemotherapy of fixed tissue stages of certain mammalian malarias, and the culture of insect tissues.



Oral administration of experimental drug to chickens infected with malaria.

LABORATORY OF PARASITIC DISEASES

The Laboratory of Parasitic Diseases maintains a well-diversified research program with a strong emphasis on fundamental studies of parasites and parasitic diseases. The competencies and interests of the scientific staff cover the entire field of parasitology, such as the natural history of protozoa and helminths of medical importance, epidemiology of parasitic infections, immunity, and the physiology and biochemistry of parasites.

The primary interest of the staff is basic research, but laboratory data find application in the field and the clinic. Scientists of the Laboratory respond to requests for help and advice concerning practical problems on the prevention and control of parasitic infections. They are also consulted concerning the diagnosis and management of particular parasitic diseases. In recognition of these responsibilities, some activities of the staff are

Performing a vitamin assay of the serum of patients who have been kept on special diets to evaluate the effect of nutrition on the course of schistosomiasis and on the effects of chemotherapy.

oriented to increasing the fundamental knowledge needed for solving such practical problems. Conversely, laboratory findings can stimulate clinical and field research.

An example of a field study which logically extends laboratory findings is a project in Puerto Rico on the relation of nutrition to helminthic infection. The project originated from laboratory data that showed beneficial effects of certain diets on infected animals. The principal infection under study is schistosomiasis, a debilitating illness affecting some 150 million people in tropical and subtropical climates. However, observations are also made on concomitant infections with hookworms, whipworms, and stomach worms.

Research projects in progress include such diverse subjects as the role of helminths in the causation of cancer, the successful development of helminths and protozoa in germfree environments in animals and test tubes, destruction of snail carriers by chemical means, the fractionation of antigens, and the effects of nutrition on chemotherapy of parasitic diseases.

Putting nematode larvae into a Baermann apparatus to separate them from the solid materials on which they have been growing. This is the first process in sterilizing the larvae, which will then be put into sterile cultures for working on the development of the parasitic stages in the test tube.

LABORATORY OF TROPICAL VIROLOGY

The Laboratory of Tropical Virology was established in 1959 to study viral infections transmitted by mosquitoes, mites, and other arthropods. These infections represent a significant proportion of the tropical diseases which the Institute has long emphasized.

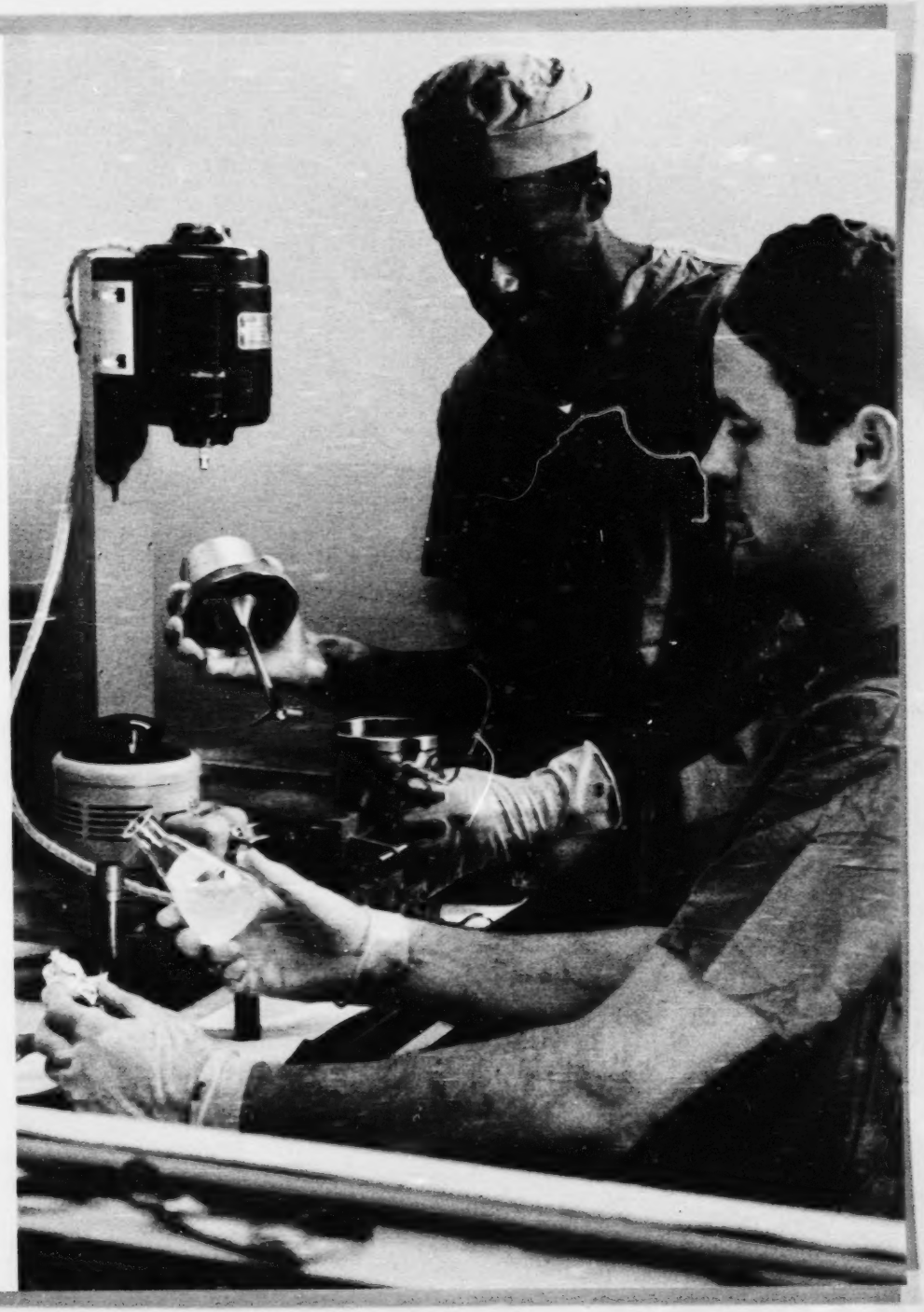
In addition to its work in Bethesda, the Laboratory has a facility in Panama, the Middle America Research Unit, a joint effort of the United States Public Health Service and the Army. Originally a temporary field party, the Unit has filled the need for a tropical disease research laboratory physically located in the U.S. Canal Zone, but concerned with the health problems of tropical virology of the Institute; research on fungal diseases, particularly histoplasmosis, is supported by the Walter Reed Army Institute of Research.

Scientists of the Middle America Research Unit in the Panama Canal Zone work in the field throughout Panama. Here a rural Panamanian family gives blood which will be examined in the laboratory for evidence of viral infection.

The Bethesda-based laboratories and the Panama component work in close cooperation on mutual problems and, in addition, each has a research program essentially independent of the other.

A long-range project in Panama on the ecology of arthropod-borne viruses in a tropical rain forest is one of the collaborative studies on which the unit is working with scientists of the Gorgas Memorial Laboratory. Viruses isolated from mosquitoes and sandflies are characterized, identified, and studied to determine relationships to human or animal disease. In another study, an attempt is being made to explore the presently unknown role of chiggers and related arthropods of the American tropics in transmitting viral and rickettsial diseases to man.

In Bethesda, basic research is related to standardization of diagnostic reagents, the pathogenesis and epidemiology of arthropod-borne and other tropical viruses, especially those in middle America. Areas of special activity include studies of virus-vector relationships, serological classification of virus strains, pilot vaccines, and development of laboratory techniques for isolation and diagnosis.

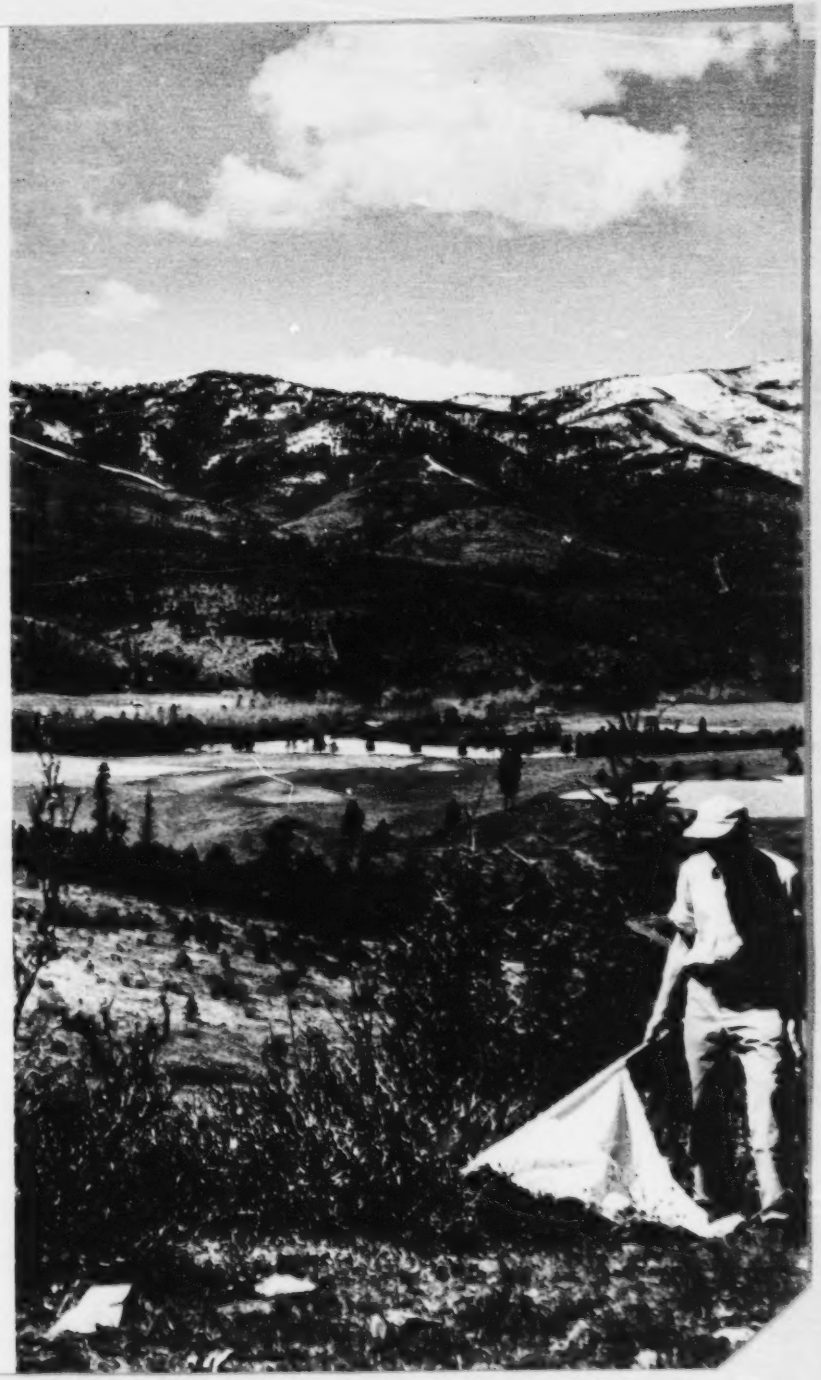


A demonstration of work with highly virulent viruses. Air from the specially constructed isolation cubicle is exhausted and incinerated separately to prevent the spread of infectious agents to the main laboratory.

THE ROCKY MOUNTAIN LABORATORY

The Rocky Mountain Laboratory was created in 1921 to study Rocky Mountain spotted fever, for which no preventive was known at that time. This special mission was completed when Laboratory scientists produced a vaccine effective against the disease. The vaccine, plus subsequent antibiotic treatment, has changed the nature of the problem over the years, but research interest in this and other arthropod- and animal-borne diseases continues.

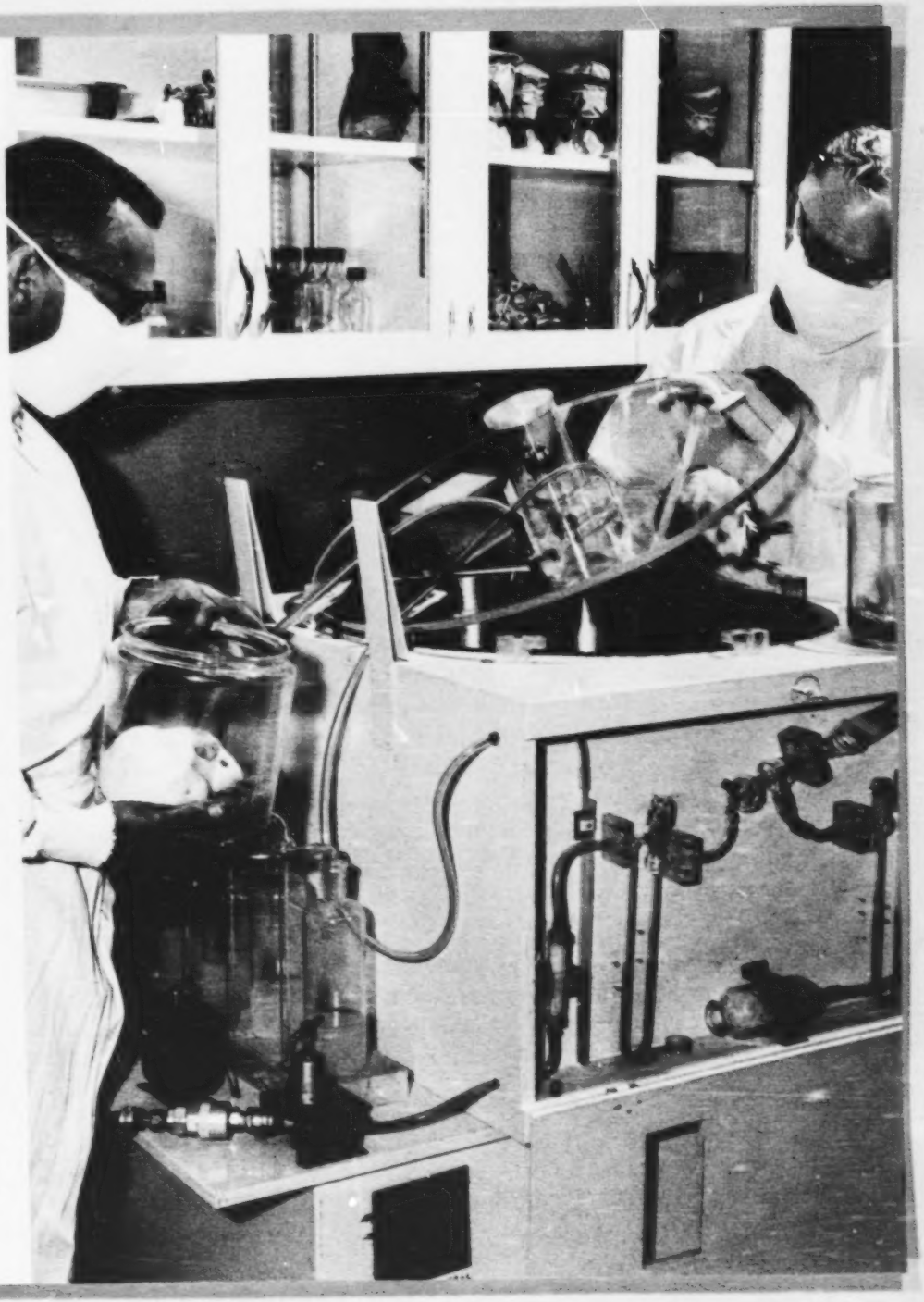
Located in Hamilton, Mont., the Laboratory is a world center for the study and control of diseases in nature transmitted to man. Not only basic laboratory studies but their necessary corollary, field investigations, are under way on a wide selection of problems such as Q fever, tularemia, rabies, Colorado tick fever, and the arthropod-borne encephalitides.



Dragging for ticks on the U.S. Forest Service Remount property where Q fever was first found in the United States, Nine Mile area, Missoula, Mont.

Some of the long-term basic research in progress concerns the chemistry and synthesis of virus proteins and associated constituents, mechanisms of allergic phenomena and their intriguing relationship to humoral immunity, prophylaxis of tuberculosis and salmonellosis, and studies of the fine structure of micro-organisms and the relationship of structural elements to biologic activity.

In spite of its relatively isolated location, the Rocky Mountain Laboratory attracts numerous professional visitors who wish to learn at firsthand its special methods and techniques, and to discuss ideas developed by the Laboratory staff. In a representative year 63 visitors, many from foreign countries, have made personal visits, and thus made possible a mutual exchange on the solution of varied problems.

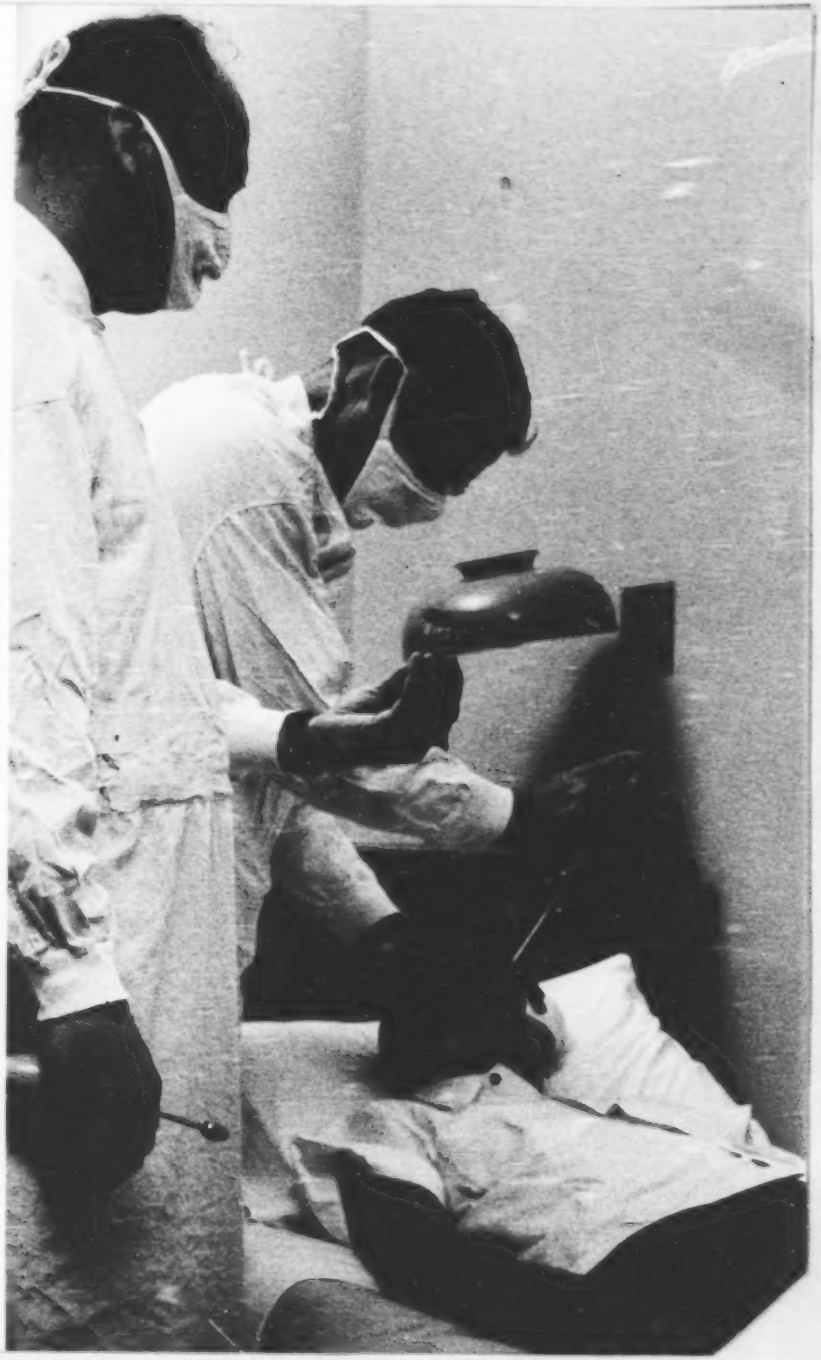


Exposing guinea pigs in a modified Middlebrook apparatus to an aerosol containing a measured dose of virulent tubercle bacilli.

LABORATORY OF CLINICAL INVESTIGATION

The Laboratory of Clinical Investigation combines laboratory research with a program directly concerned with the study of patients admitted to the Clinical Center because of illnesses of special research interest to the Institute. Since the first admission of patients in 1953, Laboratory physicians have accumulated some impressive, and in many instances unique, series of cases of hypogammaglobulinemia, cystic fibrosis of the pancreas, disseminated lupus erythematosus, and the systemic fungal infections. With both an inpatient and outpatient program, a large variety of projects are kept ready for activation to take advantage of unusual individual patients or groups of cases of infectious diseases which may occur unpredictably at any time.

A project of the Laboratory which hopefully will develop much needed information is a collaborative study with the Laboratory of Infectious Diseases on acute respiratory illnesses in patients. With the cooperation



Experimental studies involve inoculation of volunteer with virus of primary atypical pneumonia.

of human adult volunteers housed in the Clinical Center, it has been possible to produce, using respiratory syncytial virus, a rather uniform illness resembling a "cold." Volunteers have also participated in studies of primary atypical pneumonia and infections caused by parainfluenza viruses. These promising preliminary investigations form the base for long-term respiratory viral studies in patients.

The combined laboratory-clinic facilities have provided an opportunity to test new drugs in patients. One of these, a synthetic pencillin, had been supplied by a commercial drug manufacturer and was given to a group of patients having a variety of severe staphylococcal and streptococcal infections unresponsive to conventional treatment. Concomitant biochemical studies in the laboratory produced basic information about the structure and mode of action. Another drug, useful against severe systemic fungal diseases, was also tested in patients. After earlier testing in experimental animals by the Laboratory of Infectious Diseases had shown promise, the drug was administered to patients seriously ill with various systemic fungal illnesses. Some of these responded dramatically to the new drug, providing hope that the new treatment will become a valuable addition to the limited means available for combatting these illnesses.

Patient participating in an immunology project is being skin tested to find out whether her white blood cells produce a visible reaction.

EXTRAMURAL PROGRAMS

In addition to the studies conducted by the National Institute of Allergy and Infectious Diseases in its own laboratories and clinical service, the Institute participates in three major extramural programs: research grants, training grants, and fellowships.

The *research grants* program supports investigations in universities, hospitals, laboratories and other public or private institutions. Problems of health or disease broadly concerned with viruses, bacteria, parasites, fungi and rickettsia, as well as allergy-immunology, are eligible for grant funds. This support is intended to expand research activities and to encourage investigators and institutions to underake original studies in neglected areas.

Training grants are awarded to institutions for the establishment or strengthening of programs designed to provide intensive training for research and academic careers in disciplines of importance to allergy, immunology and the infectious diseases.

Complementing the training program are *fellowships* at several different levels designed to provide support for orientation, indoctrination and participation in independent research and teaching, under the close supervision of sponsors recognized for their contributions to science.

In each category, funds are awarded only after the submission of formal applications reviewed by appropriate committees the members of which are selected for their eminence in the fields which they represent. Primary factors taken into consideration are scientific merit and potential

significance of the proposed research, qualifications of the applicant, adequacy of facilities, and the appropriateness of the requested budget to the project described.

Over the years the research grants program of the Public Health Service has been evolving toward broader support of research. To implement this concept, the following grants are available in addition to the traditional grants for support of individual research projects. *Program-Project grants* are made to institutions, in the name of one or more principal investigators, for the support of a broad-based and usually long-term program of research activity. *Center grants* are made to institutions solely for the support of physical resources (excluding new construction) and common services for broad and flexible research efforts usually, but not necessarily, clinically oriented.

Two groups of *Research Career Awards* are also available. The *Research Career Award* itself is intended to support additional stable positions for experienced investigators who are continuing to develop productive careers of independent research and teaching. The *Research Career Development Award* finances positions for able young scientists who plan to pursue careers in independent research and teaching.

A valuable facet of the research grants program is sponsorship of conferences on scientific subjects of high priority. Also grant-supported is a permanent Committee on Standardization of Allergens, which is presently concentrating on ragweed allergen reference standards, with a view to achieving a uniform product which can be used by investigators all over the country to combat the omnipresent ragweed, cause of perhaps the most widespread allergy afflicting the American people.

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